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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,418	10/14/2004	Andreas Derr	WEM-07701	9609
26339 7590 01/16/2009 MUIRHEAD AND SATURNELLI, LLC 200 FRIBERG PARKWAY, SUITE 1001 WESTBOROUGH, MA 01581				
EXAMINER				
DINH, BACH T				
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1795				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/511,418

**Applicant(s)**

DERR, ANDREAS

**Examiner**

BACH T. DINH

**Art Unit**

1795

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-6,9-27 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9-12,14-25,30 and 31 is/are rejected.
- 7) ☒ Claim(s) 13 and 29 is/are objected to.
- 8) ☐ Claim(s) 1,3-6,9-27 and 29-31 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-949)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Summary***

1. This is the response to the communication filed on 10/27/2008.
2. All previous rejections are withdrawn.
3. Claims 1, 3-6, 9-27 and 29-31 remain pending in the application.
4. The amendment did not place the application in condition for allowance.

### ***Election/Restrictions***

5. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1, 3-6, 9-25 and 29-31, drawn to a measuring device and the method of measuring pH using the measuring device.

Group II, claim(s) 26-27, drawn to a method of manufacturing the measuring device.

6. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the technical features which are common to both groups are taught by Frollini, Jr. et al. (US 4,608,148). Specifically, in figures 1-3, Frollini discloses a measuring device with contact rods 14 and 16 protruding out of a base plate (insulating base plate 54) for forming the pH and reference electrodes (figure 1, 3:46-52). The measuring device further comprises of an electrode liquid (gelled electrolyte 26). Therefore since the limitations of Groups I and II fail to define a contribution over US 4,608,148 they fail to constitute a special technical feature and hence there is lack of unity between the cited claims.
7. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found

allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

8. During a telephone conversation with Donald Muirhead on 01/08/2009 a provisional election was made without traverse to prosecute the invention of a measuring device and method for measuring pH, claims 1, 3-6, 9-25 and 29-31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 26-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1, 3, 9-12, 14, 16-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with equivalent English translation provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) with further evidence provided by Jackle (US 4,686,011).

Addressing claims 1, 10 and 24, Derr discloses pH meter having a pH measuring device ([0027-0029]), figures 5a-5b), comprising:

An elongated first electrode (electrode 2) having a longitudinal axis for insertion into a material to be measured [0003];

A housing which at least partially surrounds the first electrode (housing 4), wherein the first electrode is movable in relation to the housing in the axial direction of

the longitudinal axis ([0039-0040], the arrow in figure 5a indicates that the electrode 2 is movable in the axial direction in relation to the gasket 30, which is attached to the housing 4; furthermore, during installation, the electrode 2 is inserted into the holding fixture 26; therefore, the electrode 2 is movable in the axial direction or in any direction thereof in relation to the housing 4 during installation process);

A receptacle device that accommodates an end of the first electrode (recess 26), wherein the housing 4 has a base plate (base plate where recess 26 resides) on a side of the receptacle device and the receptacle device is part of the base plate (see figure 5a); and

A chamber which is enclosed by the housing and is tightly sealed with respect to the outside, wherein the base plate tightly seals a lower area of the chamber (in figure 5a, the chamber is formed by the housing 4 and is tightly sealed by the base plate where recess 26 resides).

Derr fails to disclose the base plate is made of an elastic material.

Niedrach discloses a pH electrode; wherein, the tubular sheath 12 is fitting in a recess formed on the base plate 24 made of TEFLON (5:31-34), which is an elastic material according to Jackle (5:45-47).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr with the Teflon seal of Niedrach as the base plate because the Teflon is able to effectively receive and seal the tubular sheath 12 for forming the measuring device of Niedrach (Niedrach, 5:31-33). Therefore, one would

have expected success when using the known Teflon seal of Niedrach for sealing the known measuring device of Derr. See *KSR*, Rationale B, MPEP 2141.

Regarding the subject matters of claim 10, Derr discloses the recess 26.

Addressing claim 3, the Teflon seal of Niedrach is elastic; therefore, it would be able to move in any direction, including the axial direction, with a movement of the electrode 2.

Addressing claim 9, Derr discloses the base plate is designed like a diaphragm (figure 5a) and has folded sections (the walls of the recess 26 in the base plate is the fold sections in figure 5a)

Addressing claim 11, Derr discloses the electrode 2 is glued to the recess 26 using an adhesive [0040]; therefore, the adhesive is the sealing device of current claim.

Addressing claim 12, Derr discloses the first electrode is encased (figure 5a).

Addressing claim 14, Derr discloses a second electrode (reference electrode 3 in figure 1) provided between the first electrode 2 and the casing (casing 4).

Addressing claim 16, Derr discloses the electrode 2 is situated in a tube (housing 4) to which an electrolyte liquid is added (the gel liquid that makes up the electrode 3, [0027]).

Addressing claim 17, Derr discloses the tube 4 is displaceable in the axial direction toward the first electrode (in figure 5a, the arrow indicates that the electrode can be displaced in the axial direction with relation to the housing 4; therefore, the housing 4 can be displaced in the axial direction toward the first electrode; furthermore, the housing is displaceable with respect to the electrode 2 during removal and insertion of the electrode [0040]; therefore, the housing is displaceable in the axial direction toward the electrode 2).

Addressing claim 18, Derr discloses the electrode 2 has a measuring tip and is fitted to the recess 26 during installation [0040]; therefore, the housing is displaceable with respect to the electrode 2 during removal and insertion of the electrode. Furthermore, in figure 5a, the arrow indicates that the electrode 2 is displaceable in the axial direction; therefore, the housing is displaceably situated on the measuring tip with respect to the electrode 2.

Addressing claim 19, Derr discloses the housing decreases in the direction of the measuring tip of the first electrode (figure 5a).

Addressing claim 20, Derr discloses the electrode 2 is made of glass or has a sheath made of glass [0027].

Addressing claims 21-22, Derr fails to disclose the subject matter of current claims in the embodiment illustrated in figures 5a-5b.

Derr discloses the electrode is pivotably mounted via which the electrode 2 is pivotable away from the axial direction in the case of a force component perpendicular to the axial direction [0034, figure 8].

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device in figures 5a-5b by pivotably mounting the electrode 2 as described in [0034] because doing so would prevent the electrode 2 from breaking under transverse loads (Derr, [0031]).

12. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) as applied to claims 1, 3, 9-12, 14, 16-22 and 24 above, and further in view of Dalling et al. (US 5,425,715).

Addressing claims 4 and 6, Derr discloses the glass electrodes are breakable [0031].

Dalling discloses a reloadable injector (figure 1); wherein, a spring 114 is used as shock absorber to prevent breakage of the glass cartridge 84 under the force generated by the forward movement of the cartridge (7:32-35).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr with the spring shock absorber of Dalling because the spring shock absorber would prevent breakage of the glass electrode 2 under force exerted in the axial direction during measurement (Dalling, 7:32-35).

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) and Dalling et al. (US 5,425,715) as applied to claims 4 and 6 above, and further in view of Kuramoto et al. (US 6,228,167).

Addressing claim 5, Derr and Dalling fail to disclose the shock absorber is a rubber buffer.

Kuramoto discloses a device comprising a shock absorber 60 (figure 1) for absorbing the force exerted due to the upward or downward rotation of the shaft (7:30-33).

Furthermore, Kuramoto discloses the shock absorber can be compression rubber, tension rubber, compression spring or tension spring (23:22-26).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr with the rubber shock absorber because the rubber shock absorber, which has the same function as the spring absorber (Kuramoto, 23:22-26), would be effective at preventing breakage of the glass electrode under force exerted in the axial direction.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) as applied to claims 1, 3, 9-12, 14, 16-22 and 24 above, and further in view of Neukum (US 5,139,641).

Addressing claim 15, Derr discloses the electrode 3 is made by a gelled liquid [0027] that surrounds the electrode 2.

Derr fails to explicitly disclose that the gelled liquid is a polymer protolyte liquid.

Neukum discloses a measuring device; wherein, the reference electrode is made of a polymer protolyte liquid (2:2-3, polymer containing potassium chloride).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr by using the polymer protolyte liquid of Neukum as the gel the reference electrode liquid because the polymer protolyte liquid of Neukum functions as a reference electrode and provides long-term zero-point stability of the reference system (Neukum, 1:63-2:3).

15. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) as applied to claims 1, 3, 9-12, 14, 16-22 and 24 above, and further in view of Haggar et al. (US 4,328,912).

Addressing claim 23, Derr discloses the housing 4 is made of flexible plastic [0010].

Derr fails to disclose the materials as required by current claim.

Haggar discloses flexible plastic material of styrene-acrylonitrile or acrylonitrile-butadiene-styrene (6:31-6:42).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the housing of the measuring device of Derr with the flexible plastic

material of Haggar because the flexible plastic material of Haggar would allow the housing of Derr to having the required pivoting motion (Derr, [0010]).

16. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Niedrach (US 4,264,424) as applied to claims 1, 3, 9-12, 14, 16-22 and 24 above, and further in view of Schwartz et al. (US 4,473,458).

Addressing claim 25, Derr discloses electrodes 2 and 3 of the measuring device are connected to the processing and displaying devices [0029].

Derr fails to disclose the subject matters of current claim.

Schwartz discloses the pH meter further comprising a display (liquid crystal display 60, figure 4) and a keyboard (knobs 66 and 68 and pushbuttons 76, figure 4) situated in the housing (portion 12B of measuring device 10) and a circuit board (figure 6, 5:11-19, circuit 50) from which spring contacts (wire 34 and coil wire 38, figure 4, 5:3-13, wire 34 resembles a spring shape and wire 38 is coiled in spring like fashion) lead away to contacts (connectors 37 and 40) being situated on a bottom side (bottom side of housing portion 12A) of the base plate (closure 44, figure 4).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the meter of Derr with the keyboard, the display, the circuit board and the spring contacts as disclosed by Schwartz because the keyboard, the display and the circuit board allow one to process and display the measurements made by the electrodes and the spring contacts allow electrodes to communicate with the processing and display

devices (Derr, [0029]). Furthermore, it would have been obvious for one to situate the contacts on the bottom side of the base plate as described by Schwartz because doing so would give one a compact and portable meter (Schwartz, 3:14-22).

17. Claim 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Neukum (US 5,139,641).

Addressing claim 30, Derr discloses a method for measuring pH [0002], comprising:

Inserting a measuring device (measuring device in figures 5a-5b) into a material to be measured [0001], wherein the measuring device includes:

An elongated first electrode (electrode 2) having a longitudinal axis for insertion into a material to be measured (figure 5a, electrode 2 has a longitudinal axis, [0031]); and

A housing (housing 4) which at least partially surrounds the first electrode (figure 5a), wherein the first electrode is movable in the axial direction of its longitudinal axis ([0039-0040], the arrow in figure 5a indicates that the electrode 2 is movable in the axial direction in relation to the gasket 30, which is attached to the housing 4; furthermore, during installation, the electrode 2 is inserted into the holding fixture 26; therefore, the electrode 2 is movable in the axial direction or in any direction thereof in relation to the housing 4 during installation process), and wherein the first electrode is surrounded by a gelled reference electrode 3 [0027].

Derr fails to explicitly disclose that the gelled liquid is a polymer protolyte liquid.

Neukum discloses a measuring device; wherein, the reference electrode is made of a polymer protolyte liquid (2:2-3, polymer containing potassium chloride).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr by using the polymer protolyte liquid of Neukum as the gel the reference electrode liquid because the polymer protolyte liquid of Neukum functions as a reference electrode and provides long-term zero-point stability of the reference system (Neukum, 1:63-2:3).

18. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Derr (WO 01/57507) with English equivalent provided by Derr (US 2003/0057952) in view of Neukum (US 5,139,641) as applied to claims 31 above, and further in view of Neidrach (US 4,264,424) with further evidence provided by Jackle (US 4,686,011).

Addressing claim 31, Derr discloses the electrode 2 is movable with respect to the housing 4 in the axial direction of the longitudinal axis ([0039-0040], the arrow in figure 5a indicates that the electrode 2 is movable in the axial direction in relation to the gasket 30, which is attached to the housing 4; furthermore, during installation, the electrode 2 is inserted into the holding fixture 26; therefore, the electrode 2 is movable in the axial direction or in any direction thereof in relation to the housing 4 during installation process), and wherein the measuring device further includes:

A receptacle device that accommodates one end of the first electrode (figure 5a, electrode 2 fits into recess 26), wherein the housing 4 has a base plate (base plate where recess 26 resides) and the receptacle device is part of the base plate; and

A chamber which is enclosed by the housing and is tightly sealed with respect to the outside (the chamber in figure 5a that is tightly formed by the housing 4 and the base plate), wherein the base plate tightly seals a lower area of the chamber (the base plate seals the lower area of the housing 4 in figure 5a).

Derr fails to disclose the base plate is made of an elastic material.

Niedrach discloses a pH electrode; wherein, the tubular sheath 12 is fitting in a recess formed on the base plate 24 made of TEFLON (5:31-34), which is an elastic material according to Jackle (5:45-47).

At the time of the invention, one with ordinary skill in the art would have found it obvious to modify the measuring device of Derr with the Teflon seal of Niedrach as the base plate because the Teflon is able to effectively receive and seal the tubular sheath 12 for forming the measuring device of Niedrach (Niedrach, 5:31-33). Therefore, one would have expected success when using the known Teflon seal of Niedrach for sealing the known measuring device of Derr. See *KSR*, Rationale B, MPEP 2141.

#### ***Response to Arguments***

19. Applicant's arguments with respect to claims 1, 3-6, 9-25 and 29-31 have been considered but are moot in view of the new ground(s) of rejection.

The omission of claims 26-27 and 29-30 from examination in previous office action is regretted.

***Allowable Subject Matter***

20. Claims 13 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

21. The following is a statement of reasons for the indication of allowable subject matter: Derr discloses the electrodes 2 and 3 are connected to processing and display devices [0029]. However, Derr fails to explicitly disclose or suggest the way in which the electrodes 2 and 3 are connected to the processing and display devices.

Schwartz discloses a measuring device; wherein, the working and reference electrodes are connected to the processing and display devices in part 12A via conductive rods 37 and 40 that protrude through the base plate (figure 4). However, Schwartz fails to disclose or suggest that the contact rods include bent eye portions on the bottom side of the base plate for contacting with the outside as disclosed in figures 8-10f by current application.

In fact the prior art does not disclose nor render obvious a measuring device; wherein, the contact rods for the electrodes protrude through the base plate and include the bent eye portions at the bottom side of the base plate for contacting with the outside as disclosed by current application.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BACH T. DINH whose telephone number is (571)270-5118. The examiner can normally be reached on Monday-Friday EST 7:00 A.M.-3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571)272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BD  
01/15/2009.

/Kaj K. Olsen/  
Primary Examiner, Art Unit 1795